ABSTRACT

In a system applying orthogonal frequency division multiplexing, OFDM, a number of carriers are reserved for communication between unsynchronised nodes (N1, N2). At least one such reserved carrier is assigned to each base station. A sinusoidal signal is transmitted on this reserved carrier during a time period at least equal to two consecutive OFDM symbols. The unsynchronised receiver detects the sinusoidal signal during one of two consecutive OFDM symbol time periods. The existence, the frequency and the signal power of the signal give information about the existence and identity of the transmitter. Also, estimates of relative velocities and distances can be deduced. In preferred embodiments, the sinusoidal signal can also be used to transmit further information by using signal modulation or coding that is independent of the absolute signal phase.